

**ADAPTIVE KNOWLEDGE MANAGEMENT SYSTEM FOR VEHICLE TREND  
MONITORING, HEALTH MANAGEMENT AND PREVENTIVE MAINTENANCE**

**ABSTRACT OF THE INVENTION**

- 5   **[0028]**   A method and an Adaptive Knowledge Management is provided. The  
Adaptive Knowledge Management System is used for assisting a user with  
decision making by providing real-time, on-line automated recommendations for  
actions in a monitored vehicle troubleshooting, performance trend monitoring,  
health management and preemptive maintenance domain diagnostics and  
10   prognostics. The system creates a Structured Knowledge Repository,  
constructed from models, historical data, and heuristics for organizing a model  
domain knowledge. It uses a plurality of Analytical and Machine Learning tools  
for capturing knowledge from data sources and populating cells of the  
Structured Knowledge Repository. A Mixed-Initiative Planning module is used  
15   for interpreting operation goals for the monitored vehicle and utilizing the  
Structure Knowledge Repository for developing recommendations for user  
decision making. A plurality of Mixed-initiative Decision Support tools use the  
feedback from the Mixed-Initiative Planning module and query the Structured  
Knowledge Repository for incorporating the extracted knowledge and  
20   information into outputs dealing with current issues and contingencies.